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AMSAT NEWS SERVICE
ANS-307

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://amsat.org publishes news of Amateur Radio in space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat dot org.

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SB SAT @ AMSAT $ANS-307.01
ANS-307 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 307.01
>From AMSAT HQ KENSINGTON, MD.
November 3, 2019
To All RADIO AMATEURS
BID: $ANS-307.01

HuskySat-1 Successfully Lifted into Space

A Cygnus cargo spacecraft carrying the University of Washington's HuskySat-1 was successfully launched atop a Northrup Grumman Antares rocket Saturday morning, November 2, 1459 UTC.

The Cygnus spacecraft will dock with the ISS on November 4. Cygnus is then scheduled to depart the ISS on January 13, 2020 and raise its orbit to approximately 500 km where HuskySat-1 and SwampSat will be deployed. After deployment, HuskySat-1's 1200 bps BPSK beacon on 435.800 MHz should be active.(This beacon is decodable with the latest release of FoxTelem.) HuskySat-1 is expected to run its primary mission (testing a pulsed plasma thruster and experimental 24 GHz data transmitter) for thirty days. The satellite will then be turned over to AMSAT for Amateur Radio operation, featuring a

30 kHz wide 145 to 435 MHz linear transponder for SSB/CW communications.

For those interested in reading about HuskySat-1's development and its science, read the UW News article at https://tinyurl.com/ANS-307-HuskySat-1

[ANS thanks SpaceNews.com, Paul Stoetzer, N8HM, and UW News for the above information.]

ARISS Contact Opportunities - Call for Proposals

- Current Proposal Window is October 1, 2019 to November 30, 2019
- Upcoming Proposal Window is February 1, 2020 to March 31, 2020

The Amateur Radio on the International Space Station (ARISS) Program is seeking formal and informal education institutions and organizations, individually or working together, to host an Amateur Radio contact with a crew member on board the ISS. ARISS anticipates that the contact for proposals submitted in the proposal window now open would be held between July 1, 2020 and December 31, 2020. ARISS is happy to announce a second proposal window will open February 1, 2020 for contacts that would be held between January 1, 2021 and June 30, 2021. Crew scheduling and ISS orbits will determine the exact contact dates. To maximize these radio contact opportunities, ARISS is looking for organizations that will draw large numbers of participants and integrate the contact into a well-developed education plan.

The deadline to submit proposals for contacts between July 1, 2020 and December 31, 2020 is November 30, 2019. The proposal window for contacts between January 1, 2021 and June 30, 2021 will open on February 1, 2020 and close on March 31, 2020. Proposal information and documents can be found at www.ariss.org. Two ARISS Introductory Webinar sessions will be held on November 7, 2019. The first is at 6:00 PM ET and the second is at 9:00 PM ET. The same material will be covered during both sessions, so choose the session that best fits your schedule. The Eventbrite link to sign up is https://ariss-introductory-webinar-fall-2019.eventbrite.com

The Opportunity
Crew members aboard the International Space Station will participate in scheduled Amateur Radio contacts. These radio contacts are approximately 10 minutes in length and allow students to interact with the astronauts through a question-and-answer session.

An ARISS contact is a voice-only communication opportunity via Amateur Radio between astronauts and cosmonauts aboard the space station and classrooms and communities. ARISS contacts afford education audiences the opportunity to learn firsthand from astronauts what it is like to live and work in space and to learn about space research conducted on the ISS. Students also will have an opportunity to learn about satellite communication, wireless technology, and radio science. Because of the nature of human spaceflight and the complexity of scheduling activities aboard the ISS, organizations must demonstrate flexibility to accommodate changes in dates and times of the radio contact.

Amateur Radio organizations around the world with the support of NASA and space agencies in Russia, Canada, Japan and Europe present

educational organizations with this opportunity. The ham radio organizations' volunteer efforts provide the equipment and operational support to enable communication between crew on the ISS and students around the world using Amateur Radio.

More Information
For proposal information and more details such as expectations, proposal guidelines and proposal form, and dates and times of Information Webinars, go to www.ariss.org. Please direct any questions to ariss.us.education(a)gmail.com.

[ANS thanks Dave Jordan, AA4KN, ARISS PR for the above information.]

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Video recordings of the 2019 AMSAT Space Symposium have been posted:
https://www.facebook.com/pg/AMSATNA/videos/
(This page should be accessible to all)

The Foundations of AMSAT - 2019 AMSAT Space Symposium Banquet Panel
is posted at: https://youtu.be/bRmn4gjvuTI

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FoxTelem Version 1.08r Released

Chris Thompson, G0KLA has released Version 1.08r of FoxTelem. This release provides several enhancements and needed changes for FOX-1E and HuskySat, a partnership with the University of Washington.

Users will need to download this version to successfully decode data from the two new spacecraft which will transmit BPSK telemetry on 70cm. (Chris suggests now is a good time to put up a 70cm antenna if you do not have one!)

After version 1.08p was released earlier this week, IC-9700 users immediately noticed difficulties. Version 1.08r was immediately released. Chris notes:

" There were two issues that prevented good decodes from the IC-9700:

1 - The IF output of the IC-9700 is not a true IQ signal and you have both a lower and upper sideband image. One has the bits flipped upside down. Historically FoxTelem has coped with the bits with either sense, even though only one is "correct", so 1.07 decoded fine from the wrong image. I had introduced a bug that meant the "bit flip" check was not run. That code is back in.

2 - There was also an issue where the algorithm that finds the signal was not being run if SatPC32 position was being read. That was a common configuration for IC-9700 owners, so it compounded the problem. The code is now fixed."

Key changes include the following:

- PSK decoders are easier to select.
- Automatically change the band from 2m to 70cm and the mode from FSK to PSK if needed (and enabled).
- Allows default mode to be set for each spacecraft.
- No longer overwrites the user settings (e.g. as max/min frequency) when spacecraft files are updated.
- Saves the properties whenever they are changed (rather than just at exit).
- Allows the user to change the display name for a spacecraft without

changing the KEPS name.
- Prevents FOXDB from being corrupted when power restarted.
- Better memory management so that long running FoxTelem sessions do not end up out of memory.
- Allows MAX and MIN records to be displayed in table on the telemetry tab.
- Shows the Capture Date for the record being displayed (e.g. RT, MAX, MIN).
- Deletes existing files when server data is downloaded.
- Ties the STP date more accurately to the position of the SYNC word in the bit buffer to avoid stamping frames with the same date.
- Many small bugs and crashes fixed.

A full list of changes can be found at
https://github.com/ac2cz/FoxTelem/milestone/15?closed=1

You can download the new release at
http://amsat.us/FoxTelem/windows/
http://amsat.us/FoxTelem/linux/
http://amsat.us/FoxTelem/mac/

Feel free to email Chris with any questions, suggestions or bug reports to chrisethompson at gmail dot com.

[ANS thanks Chris E. Thompson, G0KLA for the above information.]

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The 2019 AMSAT Symposium Proceedings USB flash drives, featuring 1.98 GB of information, including the 2019 Proceedings and all previously published Proceedings dating back to 1986 are now available on the AMSAT store
https://tinyurl.com/ANS-300-Symposium-Flash-Drive
(allow 10 business days for the next batch to be loaded with the files)

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Fox-in-a-Box Upgrades for FoxTelem V 1.08r

In addition to Chris Thompson's announcement. Burns Fisher, WB1FJ reports that version of FoxTelem has been tested on Fox-in-a-Box installations (FoxTelem running on a Raspberry Pi). Starting immediately with serial number 110, FoxTelem Version 1.08r will be included on the SD cards that are ordered from the AMSAT store. (It is not yet on the download file.)

If you have a Fox-in-a-Box with an older version and you wish to upgrade it (highly recommended) follow these steps:

- Download http://amsat.us/FoxTelem/linux/FoxTelem_1.08p_linux.tar.gz to the Desktop using the browser on your FIAB.
- Double-click the file to extract it to a directory(folder) named "FoxTelem_1.08r_linux".
- Next, stop the running FoxTelem and edit the file on your desktop named "StartFoxTelem". (Right-click and choose Text Editor.)
- About the third line from the bottom, change "foxtelem_1.07_linux" to "FoxTelem_1.08r_linux". (Be sure the capital letters are right.)
- Exit from the editor and double-click on "StartFoxTelem" and chose "Execute".
- The new FoxTelem will start running and, as described in the manual you will start getting questions about whether you want to upgrade. Say yes to each question.

After FoxTelem has started successfully, you should be all set, and FoxTelem should start automatically every time your reboot.

If you have any issues, please Burns know at wb1fj at amsat dot org.

[ANS thanks Burns Fisher, WB1FJ for the above information.]

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Need new satellite antennas? Purchase Arrows, Alaskan Arrows, and M2 LEO-Packs from the AMSAT Store. When you purchase through AMSAT, a portion of the proceeds goes towards Keeping Amateur Radio in Space. https://amsat.org/product-category/hardware/

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AMSAT Seeks Digital Communications Team Members

AMSAT is in the process of redesigning its website and is looking to immediately fill key volunteer member additions to its digital communications team. Available positions include a Webmaster, Content Managers, and an Online Store Co-Manager. Candidates must have experience with Word press and be a current AMSAT member.

Webmaster:
The Webmaster works as an integral member of the AMSAT Digital Communications Team in planning, organizing, implementing, and supporting strategic web technologies. Under minimal supervision, the Webmaster collaborates with the Digital Communications team and AMSAT Development to facilitate ongoing content creation, development of standards, and overall management of AMSAT's website and member portal. The primary objectives of the Webmaster are to ensure that AMSAT's digital presence accurately portrays the character, quality and heritage of AMSAT, provide an efficient user experience, and serve to increase recruitment and financial contributions.

Web Content Managers:
Web Content Managers ensure AMSAT's website and webpages follow best content practices and meet the diverse needs of internal and external customers. As part of the AMSAT Digital Communications Team, Website Content Managers must understand the organizational needs, map them to the end-user needs and work with applicable AMSAT departments to create content strategy and plan for individual webpages.

Online Store Co-Manager:
The Online Store Co-Manager updates and refreshes the AMSAT Store when new merchandise becomes available, deletes merchandise when no longer available, and updates pricing and shipping information when necessary. Experience in WooCommerce is required.

If you want to be a part of the solution in delivering the quality web services AMSAT members deserve, we could sure use your help. Please contact the AMSAT VP of User Services at ke4al (at) yahoo (dot) com.

[ANS thanks Robert Bankston, KE4AL for the above information.]

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AMSAT, along with our ARISS partners, is developing an amateur radio package, including two-way communication capability, to be carried on-board Gateway in lunar orbit.

Support AMSAT's projects today at https://www.amsat.org/donate/

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The 39th Annual ARRL and TAPR Digital Communications Conference
Announced September 11-13, 2020, Charlotte, NC

Mark your calendar and start making plans to attend the premier technical conference of the year, the 39th Annual ARRL and TAPR Digital Communications Conference to be held September 11-13, 2020 in Charlotte, NC. The conference location is the Renaissance Charlotte Suites.

The ARRL and TAPR Digital Communications Conference is an international forum for radio amateurs to meet, publish their work, and present new ideas and techniques. Presenters and attendees will have the opportunity to exchange ideas and learn about recent hardware and software advances, theories, experimental results, and practical applications.

Topics include, but are not limited to: Software Defined Radio (SDR), digital voice , digital satellite communications, Global Position System (GPS), precision timing, Automatic Packet Reporting System(tm)(APRS), short messaging (a mode of APRS), Digital Signal Processing (DSP), HF digital modes, Internet interoperability with Amateur Radio networks, spread spectrum, IEEE 802.11 and other Part 15 license-exempt systems adaptable for Amateur Radio, using TCP/IP networking over Amateur Radio, mesh and peer to peer wireless networking, emergency and Homeland Defense backup digital communications, using Linux in Amateur Radio, updates on AX.25 and other wireless networking protocols.

Complete conference details including registration information, call for papers and preliminary agenda can be seen at https://www.tapr.org/dcc

[ANS thanks TAPR for the above information.]

VUCC Awards-Endorsements for October 2019

Here are the endorsements and new VUCC Satellite Awards issued by the ARRL for the period October 1, 2019 through November 1, 2019. Congratulations to all those who made the list this month!

Call	Sep	Oct
W5RKN	675	694
N0JE	569	637
K9UO	475	500
W5TD	384	392
AC9E	352	353
HP2VX	300	351
AD0HJ	325	350
K5IX	325	350
W7JSD	309	336
G0IIQ	112	251
ND0C	200	250
WB8TGY	New	210
N4DCW	New	201
KC9VGG	127	200

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NX2X    119    178
KC9UQR    132    172
W0NBC    137    152
VE1VOX    New    126
N4QX    120    125
AA0MZ    102    112
WA9JBQ    New    104
N9FN    New    103
PU8MGB    New    102
KI4US    New    101
AB4GE    New    100
N0RC    New    100
S57NML    New    100
W2ASC    New    100

If you find errors or omissions. please contact me off-list at
<mycall>@<mycall>.com and I'll revise the announcement. This list was
developed by comparing the ARRL .pdf listings for the two months.
It's a visual comparison so omissions are possible. Apologies if your
call was not mentioned. Thanks to all those who are roving to grids
that are rarely on the birds. They are doing most of the work!

[ANS thanks Ron Parsons, W5RKN for the above information.]


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Upcoming Satellite Operations

South TX (EL0x and EL1x) November 2-9, 2019
Ron, AD0DX, will be vacationing in McAllen TX area the week of
Nov 2 - 9. Ron is flying in and out of San Antonio (EL09) and
staying in EL06. He hopes to activate most of the surrounding grids
(EL06, EL07, EL08, EL09, EL15, EL16, EL17, EL18, and EL19) over the
week. Ron will tweet details during the trip at
https://twitter.com/ad0dx

EM68/69  November 3-5, 2019
Tanner, W9TWJ, will be vacationing in Illinois, November 3 - 5.
Key word is vacation, but he will jump over to activate the EM68/EM69
gridline on FM satellites. Watch Tanner's Twitter feed for further
announcements at https://twitter.com/twjones85

Nunavut, Canada (ER60) November 11 - December 6, 2019
The Eureka Amateur Radio Club, VY0ERC, will be on station, the Polar
Environment Atmospheric Research Laboratory, November 6 through
December 11.  They have some house keeping duties to perform on
arrival and just before they leave, not to mention that it's wicked
cold up there (-25 to -35C not counting windchill), so keep an eye
on the VY0ERC twitter feed for announcements on when they plan to
step outside at https://twitter.com/vy0erc

EA9 Melilla (IM85) November 18-21, 2019
Philippe, EA4NF, will be operating from Melilla as EA9/EA4NF from
November 18 to 21, 2019. This very small Spanish territory located in
Northern Africa, which is a very rare GRID and is listed as one of
the Most Wanted SAT DXCC.  Updates and passes on Philippe's Twitter
at https://twitter.com/EA4NF_SAT

Key West (EL94) December 3-6, 2019
Tanner, W9TWJ, will be vacationing in Key West December 3 - 6.
Key word is vacation, but he will jump on some FM satellite passes
to activate EL94 for those that need it or just want to chat.
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Watch Tanner's Twitter feed for further announcements at
https://twitter.com/twjones85

Hawaii (BK19, BK28, BK29, BL20) December 21-28, 2019
Alex, N7AGF, is heading back to Hawaii over Christmas. This will be a holiday-style activation, with special emphasis on the grid that got away - BK28. Keep an eye on Alex's Twitter feed for further announcements at https://twitter.com/N7AGF

[ANS thanks Robert Bankston, KE4AL for the above information.]

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The digital download version of the 2019 edition of
Getting Started with Amateur Satellites is now available as a
DRM-free PDF from the AMSAT Store. Get yours today!
https://tinyurl.com/ANS-237-Getting-Started

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ARISS News

* Completed Contacts
Farmwell Station Middle School Space Dreamers, Ashburn, VA, direct via K4LRG
The ISS callsign was NA1SS.
The scheduled astronaut was Drew Morgan KI5AAA.
The contact was successful on October 29, 2019 at 15:01:27 UTC.

* Upcoming Contacts
Private UKEB School, Izmir, Turkey, telebridge via K6DUE
The ISS callsign is presently scheduled to be NA1SS.
The scheduled astronaut is Luca Parmitano KF5KDP.
Contact is go for Tuesday, November 5, 2029 at 12:34 UTC.

Istituto Comprensivo "G.B. Perasso", Milano, Italy and Istituto Comprensivo Montignoso - Scuola secondaria I grado "G.B.Giorgini", Montignoso, Italy
Telebridge via VK5ZAI.
The ISS callsign is presently scheduled to be NA1SS.
The scheduled astronaut is Luca Parmitano KF5KDP.
Contact is go for: Wednesday, November 6 2019 at 09:27:34 UTC.

[ANS thanks Charlie Sufana, AJ9N for the above information.]

Shorts from All Over

* AmazonSmile Purchases Add Up!

AmazonSmile recently reported that the Radio Amateur Satellite Corporation received a quarterly donation of $280.92 thanks to customers shopping at smile.amazon.com. To date, AmazonSmile has donated a total of $4,194.21 to AMSAT.

[ANS thanks Dr. Thomas A Clark, K3IO for the above information.]

* GNU Radio Conference Recordings Available

The GNU Radio Conference was held September 16-20, 2019 at the

Marriott at the Space & Rocket Center in Huntsville, Alabama. A total

of 41 talks across a variety of topics are now available on YouTube. The GNU Radio Conference staff thanks all the speakers for their participation. View the playlist of presentations at https://t.co/zjRYq7yjr1

[ANS thanks GNU Radio for the above information.]

* Building a Raspberry Pi-Based SatNOGS Ground Station

Corey Shields uses a Stegoboard 122 kit with the new Raspberry Pi4 to rebuild his ground station. What resulted is a pretty cool wall-mounted ground station. Read the full article at https://tinyurl.com/ANS-307-Ground-Station

[ANS thanks Corey Shields for the above information.]

* News from the First Week of WRC

Week 1 of the 2019 World Radiocommunication Conference in Sharm El-Sheikh, Egypt, November 1, 2019 saw agreement reached on several issues on which discussions prior to the conference had revealed consensus. Those were the easy ones; the rest will be more difficult. Read the full report at https://tinyurl.com/ANS-307-WRC

[ANS thanks AMSAT-UK for the above information.]

* The Dzhanibekov Effect (Or, Tennis Racket Theorem) and AO-73

Dave Johnson, G4DPZ, posted an analysis of the AO-73 rotation and flip. Dave says, "We have speculated why the satellite spins up and down and occasionally flips the direction of spin. Recently Jason Flynn, G7OCD found a YouTube video that might explain the flip which introduces The Dzhanibekov Effect or Tennis Racket Theorem in regards to stability of rotating bodies (such as spacecraft)." Read the article and watch the video at: https://groups.io/g/FUNcube/topic/40405577 https://www.youtube.com/watch?v=1VPfZ_XzisU

[ANS thanks Dave Johnson, G4DPZ for the above information.]

* Amateur Radio and Linux - A Beginners Guide

Linux and Amateur Radio is a PDF presentation about Amateur Radio and Linux presented by : Dave Mamanakis, KD7GR. This presentation cover basic concepts of the open source operative system. View the presentation at https://tinyurl.com/ANS-307-Linux

[ANS thanks the DX Zone for the above information.]

* Amateur Radio CubeSat Demonstration at Goddard, November 3, 2019

The Goddard Amateur Radio Club members invite the public to see a demonstration of an Amateur Radio CubeSat simulator. The simulator consists of a solar/battery powered CubeSat that beacons telemetry data and a Raspberry Pi-based ground station that will receive and display the data in real time. The club will also set up radio equipment and attempt to communicate with other hams across the

country using amateur satellites as they pass overhead. Club members will be on hand to explain the use of Amateur Radio satellites and equipment. The event is open to the public from 12:00 to 4:00 PM. The Center is located at 9432 Greenbelt Rd, Greenbelt, MD 20771.

[ANS thanks Patch.com for the above information.]

* ESA Announces New ISS Opportunity for University Students

ESA Education is inviting university student teams to submit proposals related to designing, building and operating an experiment that will be launched to the International Space Station and hosted inside the ICE Cubes facility for up to 4 months. The deadline for letters of intent is December 1, 2019. Full details can be seen at https://tinyurl.com/ANS-307-ESA-Opportunity

[ANS thanks ESA for the above information.]

* CQ-DATV November Issue Available

The November issue of CQ-DATV has arrived and is ready for downloading. This month's issue includes plans for a 70 cm, DVB-T, television repeater with a duplexer. Download the free, complete issue at
https://cq-datv.mobi/77.php

[ANS thanks CQ-DATV for the above information.]

* Satellite: The "Go To" Solution for Resilient Emergency Response Communications

Independent from terrestrial and wireless infrastructure, satellite communications provide a secure and reliable solution that can be deployed quickly for disaster response or national emergencies. A thorough analysis of why satellites can be useful in widespread emergency situations by a commercial provider. Read the full story at http://www.satmagazine.com/story.php?number=1950983317

[ANS thanks SatMagazine for the above information.]

In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of six post-secondary years in this status.

Contact Martha at the AMSAT office for additional student membership information.

73,
This week's ANS Editor,
Frank Karnauskas, N1UW
n1uw at amsat dot org

Sent via AMSAT-BB(a)amsat.org. AMSAT-NA makes this open forum
available to all interested persons worldwide without requiring
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